

**IN THE CLAIMS:**

1. (Currently Amended) A method for detecting, ~~spotting~~, locating and visualizing UV emittance in an environment illuminated by at least one of daytime outdoor illumination and equivalent artificial indoor illumination, the method comprising:

simultaneously imaging a ~~field of view~~ ~~suspects~~ scene suspected of containing a source of UV emittance at the same time with two imaging units, a first solar blind UV (SBUV) imaging unit ~~being suitable for visually displaying images passing a solar blind filter, imaging in the SBUV spectral band~~, and a second, visible imaging unit ~~being suitable of visually displaying images~~ imaging in the visible spectral region spectrum range; and

combining ~~the displayed images~~ by overlaying a first image obtained from said first and imaging unit over a second image obtained from said second ~~units into a~~ imaging unit thereby forming one combined visual image showing the UV emittance in its exact position within background scenery of the scene.

2. (Currently Amended) A method according to claim 1 wherein the combining of ~~the said~~ first and second images is carried out by optical ~~viewing~~ combining means, allowing a viewer to visualize the viewing of the combined visual image.

3. (Currently Amended) A method according to claim 1 further comprising transferring the combined visual image into electronic recording and/or displaying means for recording and/or displaying the combined visual image.

4. (Original) A method according to claim 3 wherein the electronic recording and/or displaying means is a videotape and a video monitor.

5. (Currently Amended) A method according to claim 1 wherein the imaging of the ~~field of view~~ scene is carried out separately by each one of ~~the said~~ two imaging units.

6. (Currently Amended) A method according to claim 1 further comprising, first acquiring an image of the scene to obtain an acquired image having a spectrum spanning at least the

~~visible spectrum range and solar blind UV spectra the SBUV spectral band of the field of view scene, and then separating the spectrum of the acquired image, wherein ~~the~~ a UV spectrum of the acquired image in the SBUV spectral range is transferred into the said first SBUV imaging unit, and the acquired image in the ~~visible spectral spectrum range~~ is transferred into ~~the~~ said second visible imaging unit.~~

7. (Canceled)

8. (Currently Amended) Apparatus for detecting, locating ~~spotting~~ and visualizing UV emittance in ~~strongly lit environments~~ an environment illuminated by at least one of daytime illumination and equivalent artificial indoor illumination, comprising:

image acquiring means, for acquiring an image of a ~~field of view scene~~, the image spanning at least ~~the~~ a visible spectrum and the a solar blind UV (SBUV) spectrum, and for simultaneously providing a first image from the scene of the field of view into an SBUV imaging unit, and a second image from the scene of the field of view into a visible imaging unit;

~~a UV image unit receiving an image of the field of view from said means for image acquiring~~, said SBUV imaging unit comprising:

a. a solar blind ultraviolet optical filter ~~for transmitting~~ allowing transmittance of optical radiation in the UV a solar blind UV range of the spectrum range, and absorbing optical radiation in all other spectral regions;

b. SBUV image display providing means for receiving the optical radiation in the solar blind UV spectrum range, passed through ~~the~~ said solar blind ultraviolet optical filter, and displaying providing a first visible image, being a ~~of the solar blind UV image of the field of view~~;

a said visible image imaging unit receiving ~~an~~ said second image of the field of view scene from the image acquiring means, and displaying providing a second visible image, representing visible background scenery of the field of view scene; and

combining means for receiving the first visible image of from the solar blind SBUV imaging unit ~~image of the field of view from the UV image display means~~ and the second

visible image ~~of the field of view~~ from the visible imaging unit, and combining, by overlaying said first visible image over said second visible image thereby producing one the said two images into a combined visual image showing the UV emittance in its exact position within the background scenery.

9. (Currently Amended) Apparatus according to claim 8 wherein the image acquiring means comprises two image acquiring elements, a first element ~~in the UV unit~~ providing the first image of the ~~field of view~~ scene into the SBUV imaging unit, and a second element ~~in the visible unit~~ providing a the second image of the ~~field of view~~ scene into the visible imaging unit.

10. (Currently Amended) Apparatus according to claim 9 wherein the first and second elements ~~are~~ incorporate optical lenses.

11. (Currently Amended) Apparatus according to claim ~~10~~ 8 wherein the solar blind ultraviolet optical filter is positioned one of before ~~the~~ an optical lens of the SBUV imaging unit, after the optical lens of the SBUV imaging unit, ~~or~~ and incorporated within the optical lens of the SBUV imaging unit.

12. (Currently Amended) Apparatus according to claim 8 wherein the image acquiring means comprises a beamsplitter receiving optical beams from the ~~field of view~~ scene, and splitting the said received optical beams so that the beams spanning at least the ~~visible spectrum are directed towards the visible unit, and the beams spanning at least the SBUV spectrum are directed towards the UV~~ SBUV imaging unit and the beams spanning at least the visible spectrum are directed towards the visible imaging unit;

13. (Original) Apparatus according to claim 12 wherein the beamsplitter is a dichroic beamsplitter.

14. (Currently Amended) Apparatus according to claim 8 wherein the ~~UV~~ SBUV imaging unit further ~~comprising~~ comprises a first lens receiving the radiation in the solar blind UV spectrum ~~spectral~~ range passing through the solar blind ultraviolet optical filter, and

producing a the solar blind UV image of the field scene, wherein the scene is suspected of view containing a source of UV emittance.

15. (Currently Amended) Apparatus according to claim ~~10~~ 14 wherein the SBUV image display providing means further comprises a SBUV image sensor located at the an image plane of the first lens, said SBUV image sensor creates a visible image of the solar blind UV image of the scene field of view.

16. (Currently Amended) Apparatus according to claim 15 wherein the SBUV image sensor is contains a fluorescent screen.

17. (Currently Amended) Apparatus according to claim 15 wherein the SBUV image sensor is a UV solar blind image intensifier.

18. (Currently Amended) Apparatus according to claim 15, wherein the SBUV image sensor is selected from among a group of sensors consisting of CCD, BCCD, EBCCD, ICCD, MCP-PMT having multianode, and MCP-PMT having position sensitive anode output, or the like, for producing first electronic signals describing the said UV image.

19. (Currently Amended) Apparatus according to claim 8 wherein the combination combining of the first visible image of the solar blind UV range of the field of view scene and the second visible image produced by the visible unit is carried out by a beamsplitter simultaneously receiving viewing said first and second visible images, as provided by the UV and the visible units respectively.

20. (Currently Amended) Apparatus according to claim 8, wherein the visible image imaging unit comprises an image sensor selected from among the a group of sensors consisting of CCD, CMOS, and CID, or the like types, receiving the visible image, and producing second electronic signals describing said image.

21. (Currently Amended) Apparatus according to claim 8, wherein the combined visual image is obtained by at least one of arithmetic mixing, non-arithmetic mixing, luminance keying-~~or~~ and chroma keying, for combining-said first and second electronic signals representing the first and second visible images, respectively.

22. (Original) Apparatus according to claim 8 further comprising electronic recording and/or displaying means for recording and/or displaying the combined visual image.

23. (Currently Amended) Apparatus according to claim 22 wherein the electronic recording and/or displaying means is a standard videotape ~~and-or~~ a video monitor.

24. (Currently Amended) Apparatus according to claim 8 ~~further comprising~~ wherein the visible imaging unit comprises only passive optical means ~~elements and the SBUV imaging unit comprises passive optical elements~~ and a UV image intensifier ~~for allowing an operator of the apparatus to view the combined visual image.~~

25. (Original) Apparatus according to claim 24 made in a monocular form.

26. (Original) Apparatus according to claim 24 made in binocular form.

27. (Original) Apparatus according to claim 8 further comprising stills camera means for recording the combined visual image on a stills camera film.

28. (Currently Amended) Apparatus according to claim 21 further comprising a processing unit for processing at least one of the first and second electronic signals ~~describing the UV image, the visible image or the combined image,~~ for at least one of improving the contrast between the image of the UV emittance and the background scenery ~~image of the visible view~~ in the combined visual image, ~~or~~ for the elimination of noise, the identification of UV emitters in the ~~field of view, or scene,~~ and the capture of transient UV events in the ~~field of view~~ scene.

29. (Original) Apparatus according to claim 28 wherein the processing unit is a digital processing unit.

30. (Original) Apparatus according to claim 28 wherein the processing unit is an analog processing unit.

31. (Currently Amended) Apparatus according to claim 28 further comprising means for providing an ~~alert~~alarm as to the detection of SBUV emittance which is above a predefined threshold level.

32. (Currently Amended) Apparatus according to claim 28 further comprising means for initiating action as to the detection of SBUV emittance which is above a predefined threshold level.

33. (Currently Amended) Apparatus according to claim 32 wherein the action is ~~the~~ initiation of fire ~~extinguisher~~ extinguishing means.

34. (Currently Amended) Apparatus according to claim 32 wherein the action is ~~the~~ documentation of UV emitting events in the ~~field of view~~scene.

35. (Currently Amended) A method of detecting, ~~spotting~~locating, and visualizing emittance of UV sources and emittance of IR sources in a common ~~field of view~~scene suspected of containing a source of UV emittance comprising:

~~imaging a field of view~~the scene suspected of containing a source of UV emittance, and its IR background scenery with two imaging units, a first solar blind UV (SBUV) imaging unit being suitable of visually displaying images passing comprising a solar blind filter transmitting allowing only the SBUV spectrum transmittance of UV emissions and being suitable of visually forming and displaying images from said UV emissions, and a second IR imaging unit being suitable of visually forming and displaying images in the IR spectral region; and from IR emissions; and

combining, by overlaying the images from image formed by said first and second units into a SBUV imaging unit over the image formed by said IR imaging unit, thereby forming one combined visual image showing the UV emittance and the IR emittance in their exact positions within the scenery.

36. (Previously Presented) A method according to claim 1, wherein the UV emittance is caused by electrical discharge.

37. (Currently Amended) Apparatus according to claim 8 ~~for detecting~~ wherein the UV emittance is caused by electrical discharge.

38. (Currently Amended) A method according to claim 1, ~~for detecting~~ wherein the UV emittance ~~from~~ is emittance caused by combustion.

39. (Currently Amended) Apparatus according to claim 8 ~~for detecting~~ wherein the UV emittance ~~from~~ is emittance caused by combustion.

40. (Currently Amended) A method according to claim 1, ~~for spotting~~ locating and tracking objects which are provided with a light source emitting UV radiation.

41. (Currently Amended) Apparatus according to claim 8 ~~for spotting~~ locating and tracking objects which are provided with a light source emitting UV radiation.

42. (Previously Presented) A method according to claim 1, for imaging and monitoring phenomena that produce UV emission.

43. (Currently Amended) Apparatus according to claim 8 for imaging and monitoring phenomena that produce ~~produce~~ UV emission.

44. (Original) A method according to claim 42 wherein the phenomenon is a Cherenkov radiation.

45. (Original) Apparatus according to claim 43 wherein the phenomenon is a Cherenkov radiation.

46. (Original) A method according to claim 42 wherein the phenomena produce transient UV emissions.

47. (Currently Amended) Apparatus according to claim 43 wherein the ~~the~~ phenomena produce transient UV emissions.
48. (Currently Amended) A method according to claim 1 for ~~the~~ visual imaging of ~~the~~ reflections from objects illuminated by UV light sources.
49. (Currently Amended) Apparatus according to claim 8 for ~~the~~ visual imaging of ~~the~~ reflections from objects illuminated by UV light sources.
50. (Original) A method according to claim 48 wherein the objects illuminated by the UV sources are finger prints or fluid stains.
51. (Original) Apparatus according to claim 49 wherein the objects illuminated by the UV sources are finger prints or fluid stains.
52. (Canceled)
53. (Previously Presented) A method according to claim 35, wherein the UV emittance is caused by electrical discharge.
54. (Previously Presented) A method according to claim 35, for detecting UV emittance from combustion.
55. (Currently Amended) A method according to claim 35, for ~~spotting~~locating and tracking objects which are provided with a light source emitting UV radiation.
56. (Previously Presented) A method according to claim 35, for imaging and monitoring phenomena that produce UV emission.
57. (Currently Amended) A method according to claim 35 for ~~the~~ visual imaging of ~~the~~ reflections from objects illuminated by UV light sources.
58. (Canceled)



59. (Currently Amended) Apparatus according to claim 8, wherein the image acquiring means comprises an optical lense which acquires ~~the beam~~light beams spanning the UV image and a mirror in front of a central portion of said lense, ~~but covering only part of the area, which reflects,~~ for reflecting light in the visible ~~beam to~~spectrum towards the visible ~~image capturing imaging~~ unit.